

## THE GREEN GULLY BURIAL LOCATION

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In February 1966 I was requested to provide a datum for levels, and to link together the various excavations carried out around the site (these *Memoirs* 30). As the area was being worked as a soil pit, it was considered advisable to record enough data to enable the exact site to be relocated on the ground in the future. Due to the absence of convenient co-ordinated points, permanent structures, or even defined property boundaries, this was not an easy task.

An outline of the method used will be given as a guide to others who may be faced with a similar problem.

Three steel rods were driven into the ground along a line leading to the most prominent and permanent mark visible in the area, the Keilor Church spire. At each of these steel rods, which were as far apart as circumstances permitted, angles were read to some ten or so well-defined objects such as power pylons, poles, chimneys, etc. The distances between the rods were measured, and the position of the centre of the burial relative to the nearest rod was determined. If one of the rods survives re-establishment will be simple and direct. However, angles read between only three of the referring objects will enable the site of the centre of burial to be relocated. This is an

example of the 'Three Point Problem' well known to surveyors and navigators.

In April 1970 Mr K. A. Baker, L.S., established co-ordinated points at Keilor East and Keilor West, using a DI.50 Distomat which, by means of radio waves, measures distances up to 90 miles with an accuracy of  $\pm 0.20$  feet  $\mp 3$  parts per million. In August 1970 he traversed between the two with theodolite and DI.10 Distomat which uses infra-red rays with a range of 1 kilometre and accuracy  $\pm 1$  centimetre. One additional line with a closing angle as a check sufficed to fix the adjacent rod and centre of burial.

Co-ordinates of the key points on the Australian Map Grid Zone 55 are (in metres):

Centre of burial	E 308552. <sup>45</sup> N 5821781. <sup>00</sup>
Adjacent Steel Rod	E 308547. <sup>02</sup> N 5821783. <sup>04</sup>
Keilor Church Steeple	E 310126. <sup>65</sup> N 5822437. <sup>53</sup>

The latitude and longitude of the centre of burial was then calculated to be:

37° 43' 52".<sup>03</sup> South  
144° 49' 38".<sup>95</sup> East